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ABSTRACT

This booklet offers practical, easy-to-read suggestions for teachers, paraprofessionals, and parents to help them understand intellectual development and intellectual disabilities. The first section highlights some of the factors involved in intellectual development and the importance of being sensitive to different stages of learning. The second section deals with intellectual disabilities and suggests a variety of learning activities to enhance development. The role that the teacher plays in fostering intellectual development is emphasized. The booklet should prove helpful in training teachers and caregivers who work with handicapped children in a regular classroom. Cartoon-style drawings illustrate the text. (CS)

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UNDERSTANDING YOUNG CHILDREN: INTELLECTUAL DEVELOPMENT AND INTELLECTUAL DISABILITIES

By
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Illustrated by
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The Understanding Young Children Series

This series of five booklets offers practical, easy-to-read suggestions for teachers, parents, and caregivers working with normal and handicapped young children. Individual titles are:

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(Set of 5 booklets: $7.00)

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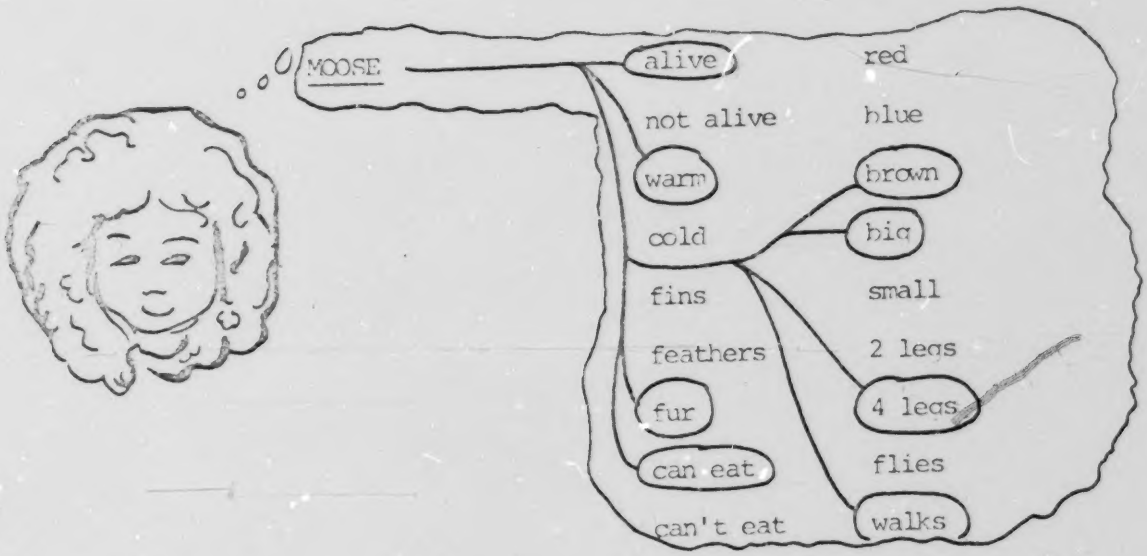
INTELLECTUAL DEVELOPMENT

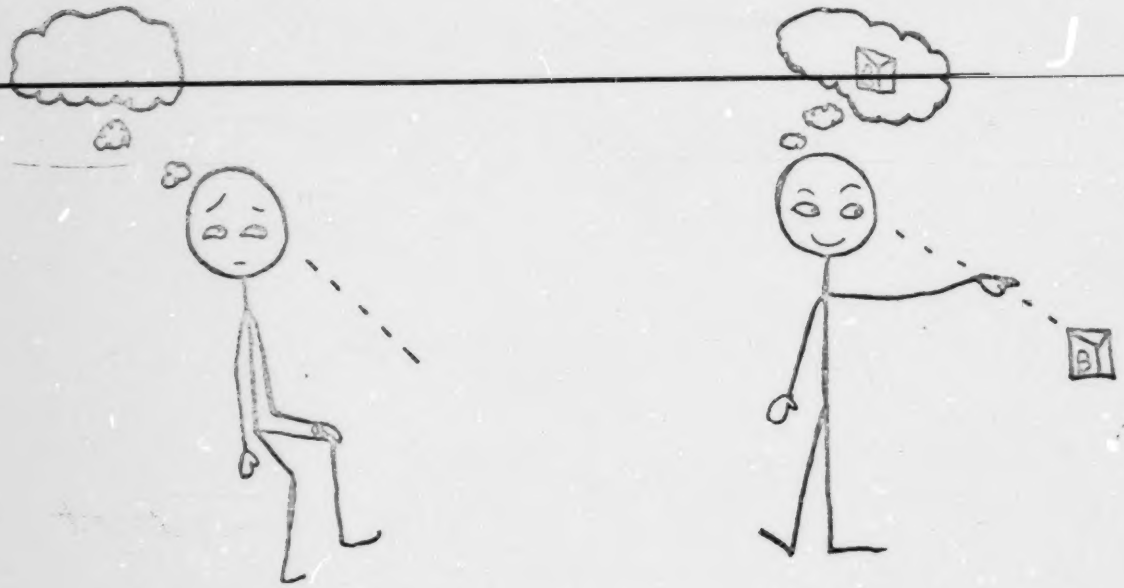
INTELLECTUAL DEVELOPMENT

Many people have studied how children acquire intelligence. One of the most important experts in the study of intellectual development is Jean Piaget. From his studies and experiments we learn that intellectual (cognitive) development proceeds in an orderly and observable fashion.

1. Intelligence is a form of information processing.



2. Thinking depends on having something to think about.

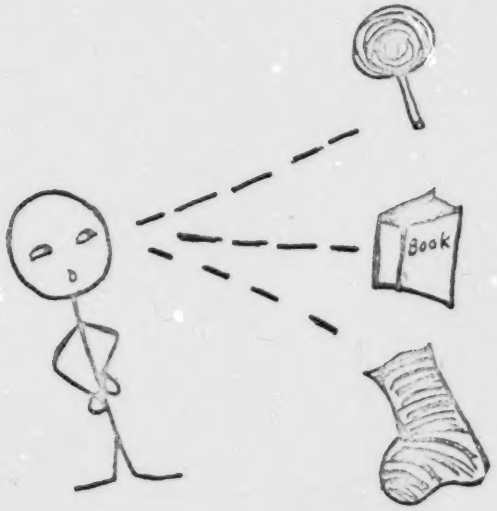


3. Intellectual capacities develop by responding to what is in the environment.

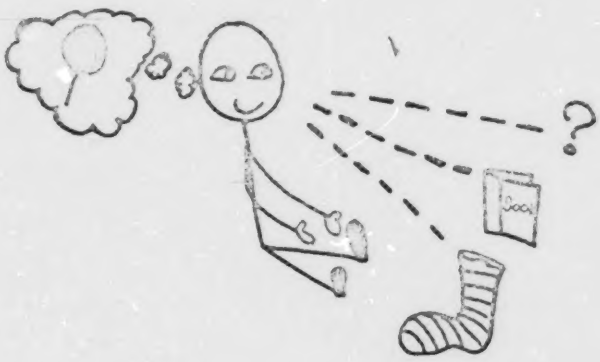
There are several stages in the development of intellectual behavior, and each stage is dependent on the outcome of the stage before it. Just as a child must learn to crawl before he can learn to walk, a child must learn to perceive before he can classify or generalize about any information. Adults can do much to provide experiences that are appropriate to each stage. If each stage is developed to its fullest, the child has a good chance for success in the next stages.

Many skills are developed in the various stages of learning. Some that apply particularly to the pre-school child are these:

Perception - Becoming aware through the senses: what one sees, hears, feels, smells or touches.



Recall - Remembering what one has perceived.



Classification or categorizing - Ability to put together objects or events that have certain characteristics in common.

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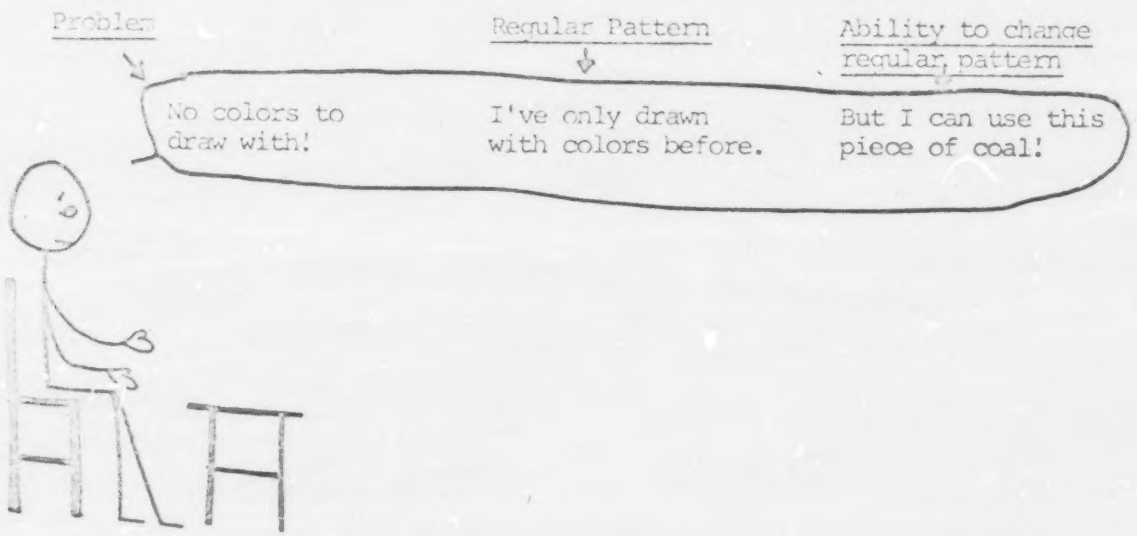
Assimilation - Ability to handle new situations or problems by using abilities and information already possessed.

Imagining - Ability to pretend or use symbols, like a word in place of an object, or one object in place of another.

Associating - Ability to join various objects or events because of some relationship they have to each other.

Accommodation - Ability to change regular patterns of thought and behavior to deal successfully with new problems or situations.


Problem
Regular Pattern
Ability to change regular pattern
No colors to draw with!
I've only drawn with colors before.
But I can use this piece of coal!

Development of Conceptual Thought

Concepts result from sensory perceptions to which labels have been attached. They come from experiences of seeing, touching, smelling, tasting, hearing, and using one's body. They come from experiences in making things happen, like building a tower and knocking it down, or dissolving gelatin in water and seeing it become firm again. These perceptions are classified by labels or names. They are stored and then used by recall and association and later by identifying.

Development of Perceptual and Verbal Experiences

During the stage when concepts are being formed, perceptual and verbal experiences have special significance in determining a child's later intellectual functioning. The child who has limited experiences, little contact with the world of people and objects

and their characteristics and properites, and few opportunites for verbal communication about experiences, may fail to develop his intellectual powers as he might have under more favorable circumstances.

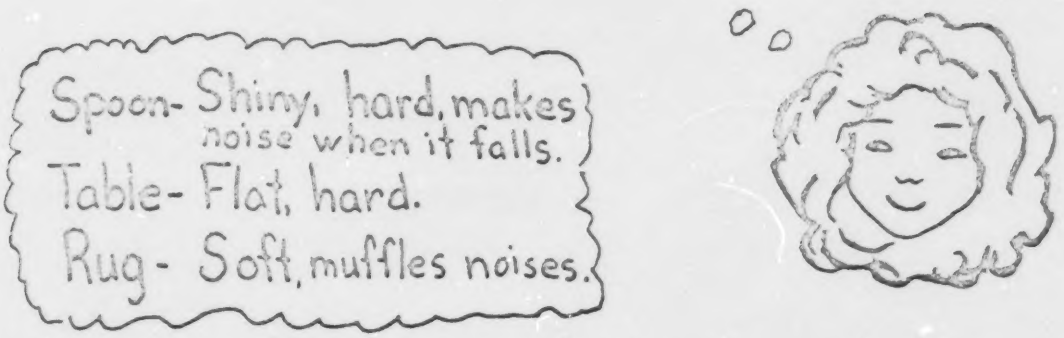
In the earliest stage, information is stored in action patterns (sensory motor patterns). During the first two years of life, a baby learns through what his senses tell him; what he touches, tastes, hears, smells and sees. A baby tends to put everything in his mouth. For the baby, the mouth is a great source of information about the nature of objects, and he learns about something only when he is directly involved.

The increasing complexities of sensory motor patterns depend not only on growth but on the child's opportunities to act on something. He drops a spoon, for example, and hears a noise as it hits the floor. He bangs on the table, and it makes another noise. He pushes his plate and it falls, making still a different noise. The noise when it falls on the kitchen floor may be different from the sound it makes hitting a rug in the living room. From all these experiences he begins to store up information.

During pre-school years, it is vitally important that the child acquire labels for his experiences. This is called language.

He needs to match experiences to labels, which is concept formation.

He learns such words as "spoon, table, plate, floor, rug" and develops some concepts about their properties.



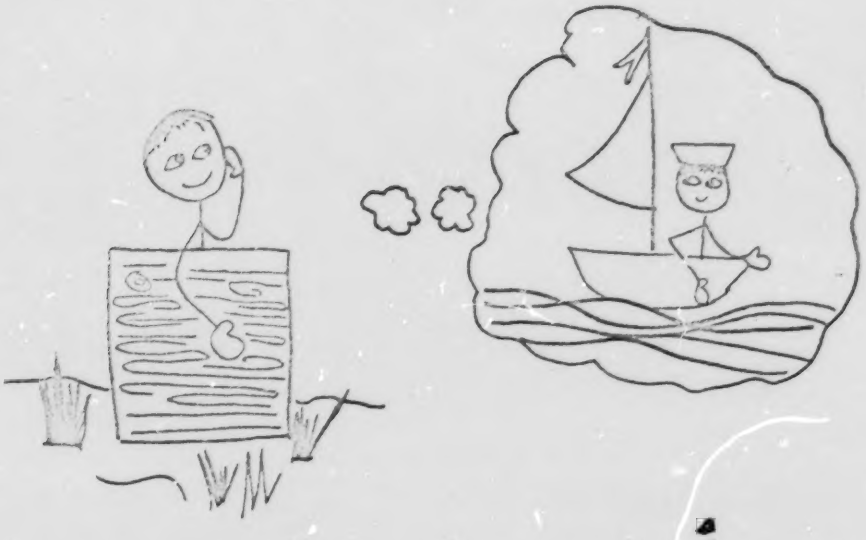
He begins to isolate aspects of experiences.

He learns to deal with relationships mentally rather than directly.

The child has now reached the stage where he can deal with the world symbolically, - that is, one thing can take the place of another.

A word means the real object

or a box can symbolize a boat



During pre-school ages the child is learning many skills that develop his intellectual abilities. There are still many skills that he cannot be expected to perform. It is important for the adults around him to understand this so they do not demand performance in areas that the child is not yet ready to understand.

Concept of Quantity

During pre-school years the child's concepts and understanding of situations are usually one single aspect of the object or event.

For example, in one experiment a child is given two equal balls of clay, and he is asked to roll one of them into the shape of a long sausage. Most five and six year olds think that a change in

form necessarily produces a change in amount. Since he is able to take account of only one dimension, such as length, a child of this age will usually say that the sausage shape contains more clay because it is longer.

In another experiment, five toy cows are placed in a fenced-off area one foot square, and five more cows are placed in a two foot square area. When asked which area has the most cows, the child will usually pick the two foot square area because it is bigger.

All the explaining in the world won't make him understand. Time will teach him.

Adults, too, can be fooled by what they think they see.

In these forms, which horizontal line is longer, Line A or B?

Our eyes tell us that Line B looks longer, but if we measure A and B we find that they are identical in length.

Irreversibility

The thoughts of pre-school children are very concrete. Most of them are about specific objects or experiences. It is hard for children to think beyond what they have experienced. If they usually

see the teacher in the classroom and rarely in other situations, they have great difficulty understanding that Teacher may be a Mommy too, with children of her own, or that Mommy is someone else's daughter. This is called irreversibility. If that brown thing with legs is called a table, how can it be a desk too?

Generalizing

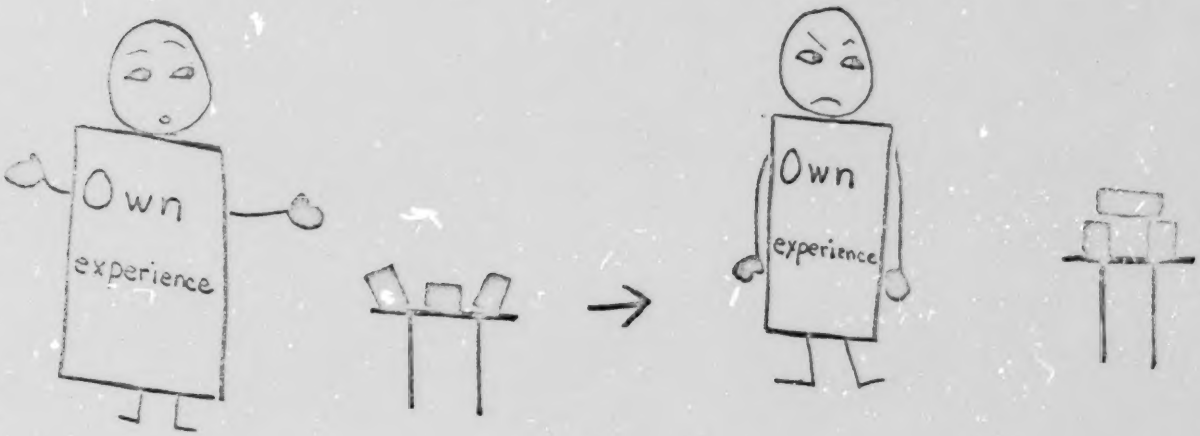
Generalizing is another process in intellectual development that is difficult for the pre-school child. If Daddy works all week and likes to sleep on Saturday, the child sees little relationship between the two. What does Saturday have to do with sleeping, and what does not working have to do with sleeping? If the child is told, "Daddy is sleeping because he wants to," or "because he is tired," it is a lot easier to understand than an explanation about Saturday and not working. The inability to generalize is also the reason a child gives very concrete answers when adults ask why he did something: "I did it because I wanted to," or "I'm here because Mommy brought me."

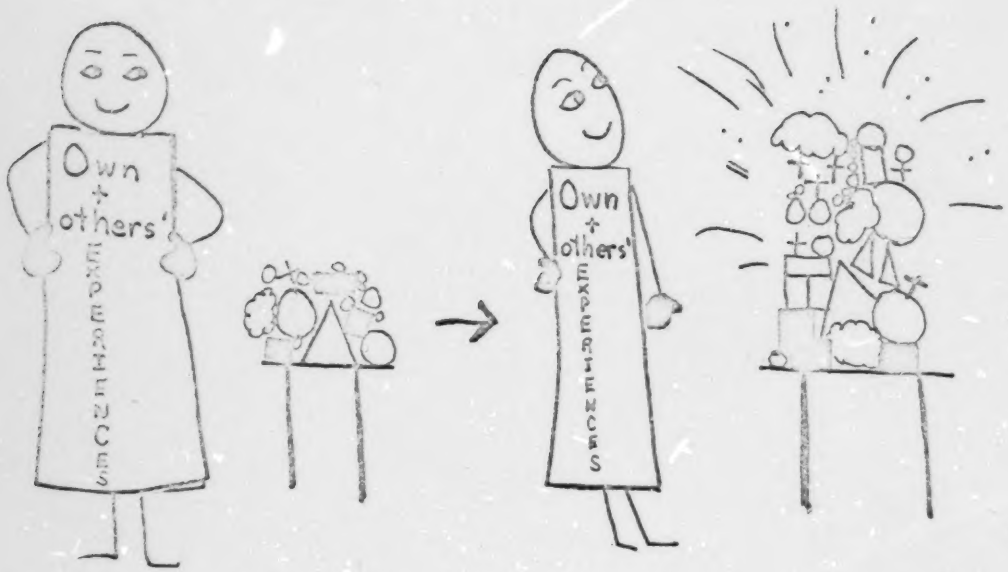
Egocentrism

Another trait of the pre-school child is his tendency to see things only from his point of view. It is extremely difficult for him to put himself in another child's position. That is why a little child can seem to be so mean to another. He does not in fact know

that it hurts another child when he is hit. He does not know what Johnny feels when his toy is snatched away.

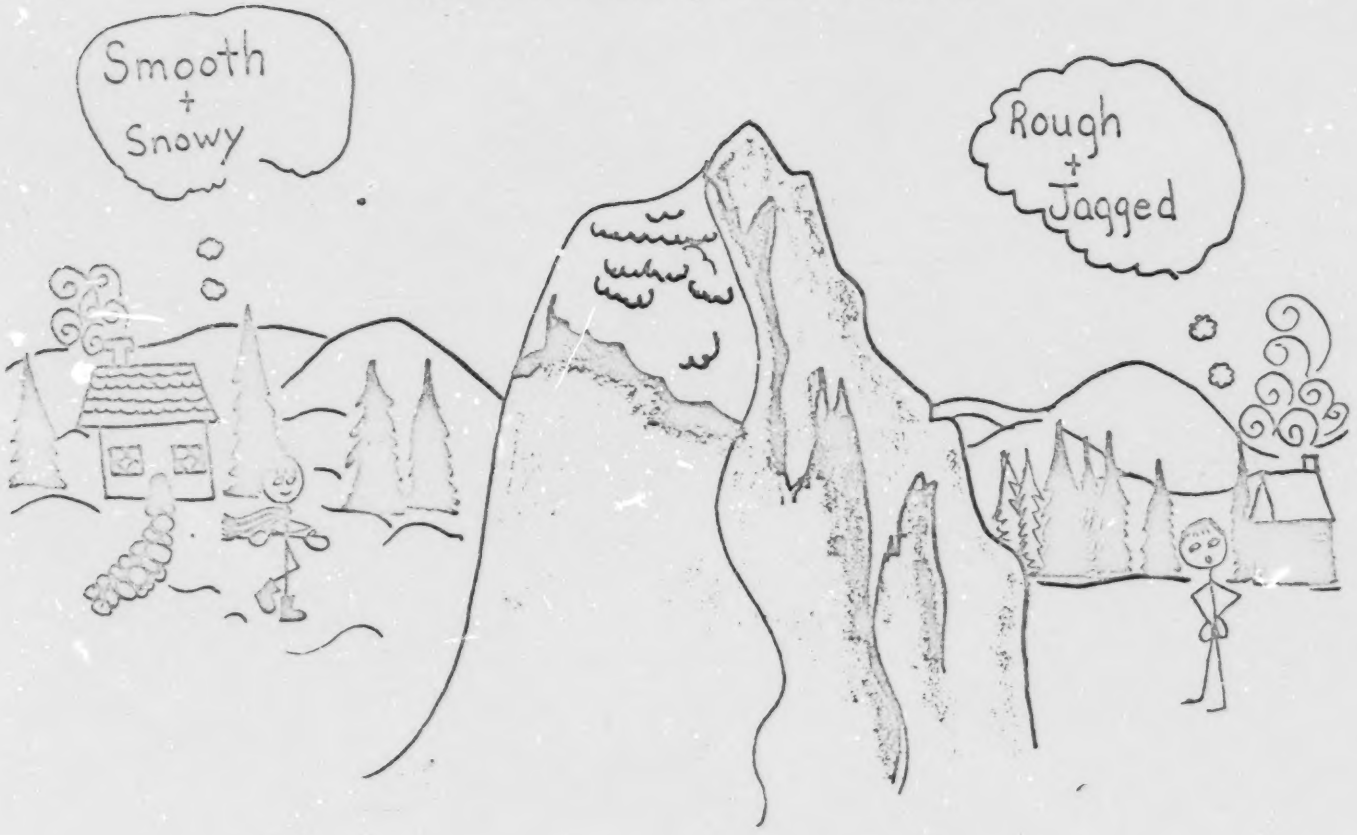
Until one can see the world through viewpoints other than his own, one's intellect is limited to viewing only what he himself has experienced. This greatly restricts what the intellect has to work with.





Unfortunately, many adults never get through the egocentric stage successfully. Development in this stage starts in the preschool years and adults can do much to guide a child in developing the skill. Repeated social experiences give the child a chance to observe others' viewpoints. Adult interpretation of social experiences, and explanations of how others feel about things are helpful to the child.

Importance of Seeing Others' Viewpoints



Joe sees his side of the mountain, and Jim sees his. If each gives a description of his side, there will be two very different but correct views, even though the mountain is the same. Unless Joe and Jim can see each others' viewpoints (mentally or actually), they will have poor concepts of what the mountain really is.

Summary

Intellectual development cannot be taught directly to a child as he might be taught to button a shirt. The process develops step by step, one stage building on another. The responsibility of the parent or teacher is to provide the best possible environment for these processes to occur, providing for many kinds of sensory experiences and allowing the child freedom to work at his own pace, so that he has the necessary time to absorb the experiences.

+ correct
- incorrect
o no response

UNDERSTANDING ABILITY CHECK

Child's Name _____ Birthdate _____ Date of Understanding Ability Check _____

I COLORS

A. Child points to or chooses color.

_____1. red
_____2. blue
_____3. yellow
_____4. green
_____5. black
_____6. orange
_____7. brown
_____8. white

B. Child tells color of object.

_____1. red
_____2. blue
_____3. yellow
_____4. green
_____5. black
_____6. orange
_____7. brown
_____8. white

II SHAPES

A. Child points to or chooses correct shape.

_____1. circle
_____2. square
_____3. triangle

B. Child says name of shape.

_____1. circle
_____2. square
_____3. triangle

III POSITION

A. Child puts toys where teacher tells him.

_____1. "Put the (block) on the table."
_____2. "Put the (bead) in the box."
_____3. "Take the (block) off the table."
_____4. "Take the (bead) out of the box."
_____5. "Put the (block) under the table."

B. Child tells where teacher puts toy.

_____1. on table.
_____2. in box.
_____3. off table.
_____4. under table

UNDERSTANDING ABILITY CHECK

IV SAME-DIFFERENT

A. Child can match two objects of the same color. _____

B. Child can match two objects of the same shape. _____

V RELATIONSHIPS

A. When shown two objects that are alike except for size, the child can tell which one is -

_____1. larger
_____2. longer
_____3. smaller
_____4. shorter
_____5. bigger
_____6. littler
_____7. taller

VI BODY PARTS

A. When asked, child can point to -

_____1. eyes
_____2. nose
_____3. mouth
_____4. ears
_____5. head
_____6. arms
_____7. hands
_____8. fingers
_____9. legs
_____10. feet
_____11. toes

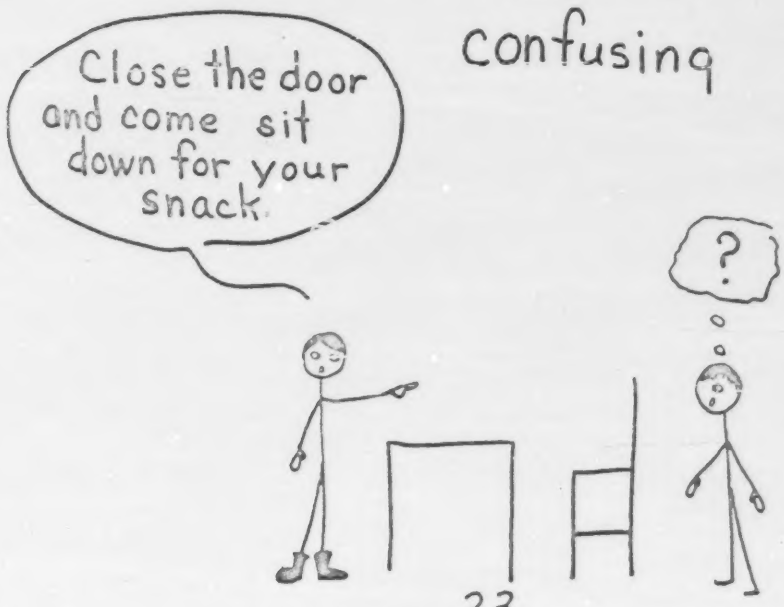
INTELLECTUAL DISABILITIES

Intellectual Disabilities

The term "mentally retarded" usually refers to an individual who is limited in his ability to learn, and often behaves like a person much younger than himself. Among the many causes for mental retardation are injury to the unborn child, poisons, brain damage, and diseases of the nervous system. One serious factor that can affect the intellectual functioning of a child is something called environmental deprivation. This means that the people and events that surround the child (his environment) have failed to meet his basic physical, emotional, and social needs, and so have failed to stimulate his desire to grow and learn and discover. In such a situation, the child may become retarded in his development.

The following are some common characteristics associated with mentally retarded children:

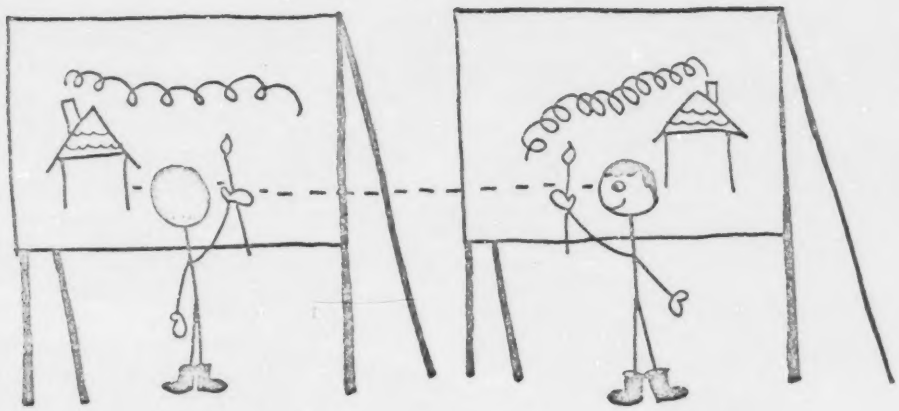
1. Mentally retarded children usually cannot follow directions that contain more than one or two steps.



Less confusing

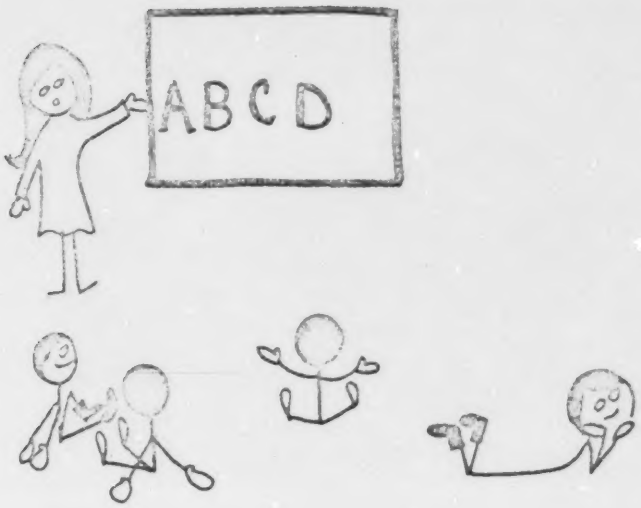
2. They often cannot direct themselves to choose an activity.

3. They have a tendency to imitate rather than create something on their own.

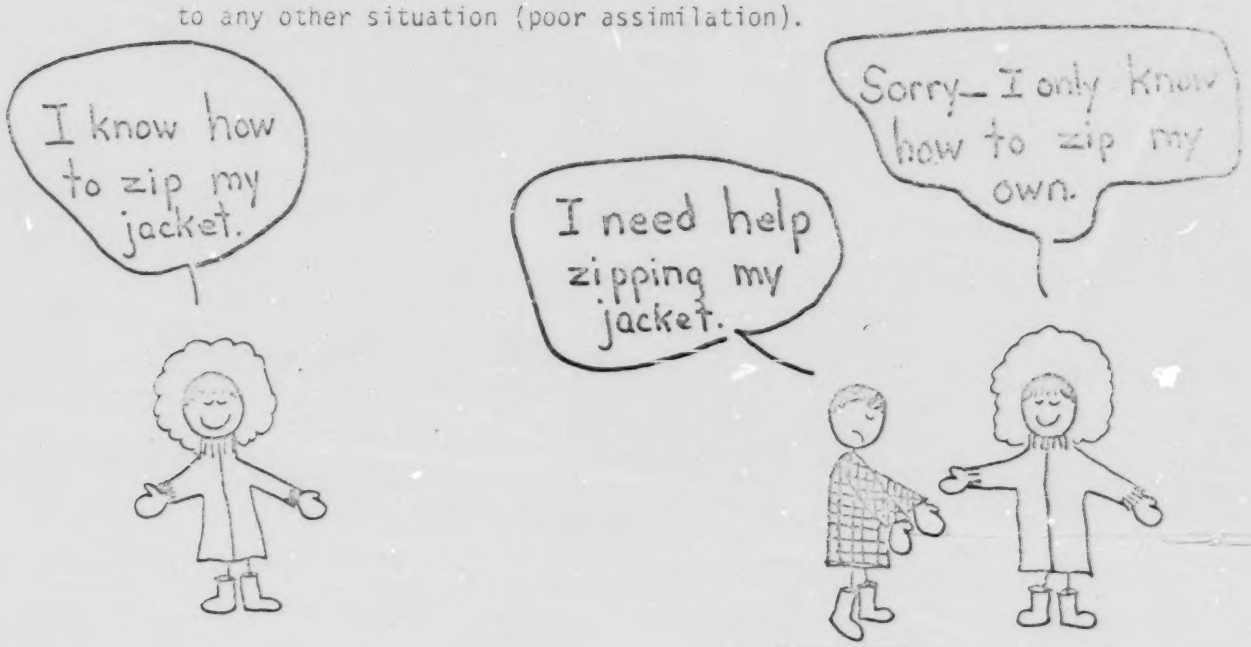


4. They have difficulty understanding anything they are not directly involved with at the time.

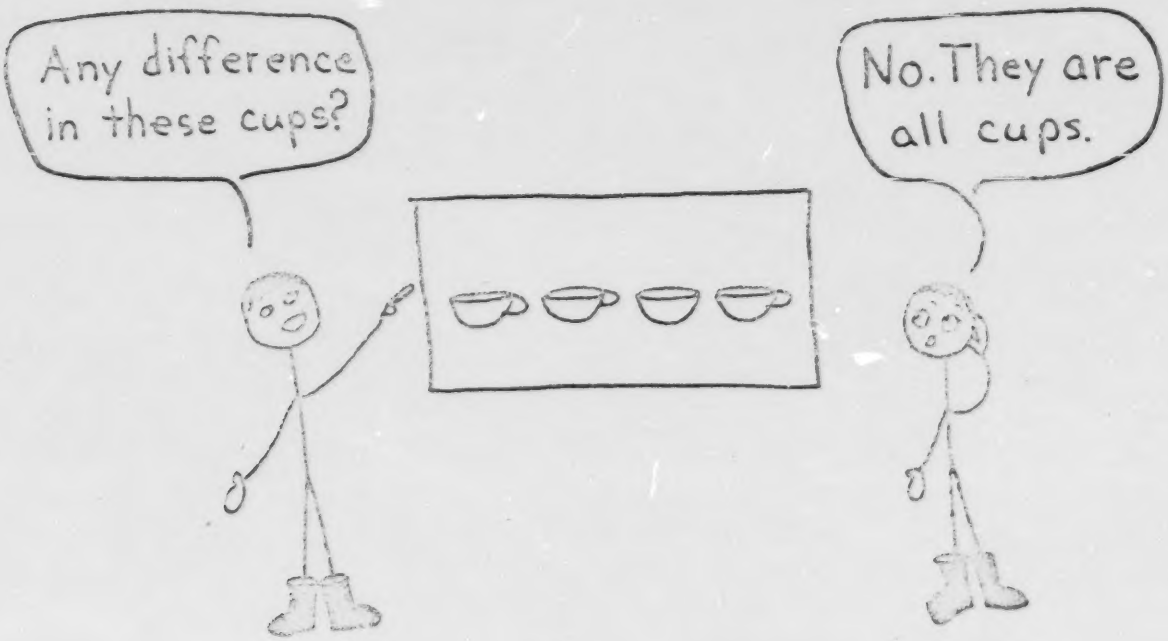
5. They have difficulty in paying attention and in learning.



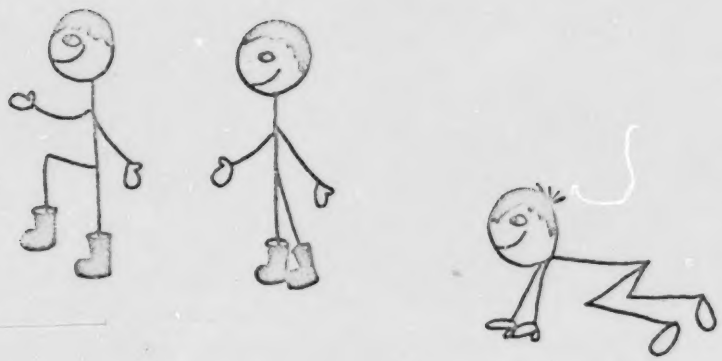
6. They are often unable to apply what they have learned in one situation to any other situation (poor assimilation).



7. They are usually unable to find differences and similarities in objects or events.



8. They are usually slower than most children in such other developmental areas as walking, talking, toilet training, etc.



9. They usually have delayed or poor motor coordination.

10. They often have poor hand-eye coordination.

Not every mentally retarded child has all of these problems. There are degrees of retardation. A mildly retarded child may appear no different from the slower children in his age group, while a more severely retarded child may appear to be more like children much younger than himself.

There is no sure way to find out exactly how retarded any particular child is. The best way to see what a child can do is to let him try. When you know what he can do, then you can help him to the next step. Many retarded youngsters can benefit from a normal pre-school setting if adults around him are aware that he has some very special needs.

Here are some suggestions for helping the mentally retarded child:

1. Self-help skills. Teaching a child how to take care of himself is one of the most important skills he can learn. Sometimes a retarded child has coordination problems and has difficulty balancing food on a spoon or unbuttoning his coat. Often, however, retarded children are not given the chance to do these things themselves. Adults around them often assume that retarded children aren't capable of learning these skills, or find it more convenient to wait on the child than to watch him struggle through a task. Most retarded children can learn self-help skills. Adults should encourage activities to help them learn to eat, dress, toilet and wash independently. The learning will be slower and messier than that of normal children, but such training is essential for developing a feeling of confidence and adequacy.

2. Step-by-step learning. Children with learning problems are often confused by tasks that appear simple to other children of the same age. the task can be broken down into different steps, the child can practice one step at a time and put them all together later on. Suppose, for example, that the class is cutting out pictures of cars from old magazines and pasting them on construction paper. "Cut out the cars and paste them on the paper," sounds like a simple task to us and to most normal four year olds. But a retarded child may be totally confused by the instructions. For him, there are many many steps in that simple order. Many skills are involved in cutting and pasting:

The child has to know, first, what the cutting motion is all about. (He may need help learning how to hold the scissors, and he will certainly have to learn how to snip pieces of paper before he can learn to cut around a picture.)

He must know how to identify a car in a picture.

He must know how to dip the brush into the paste jar.

He must know how to put the paste on only one side of the picture.

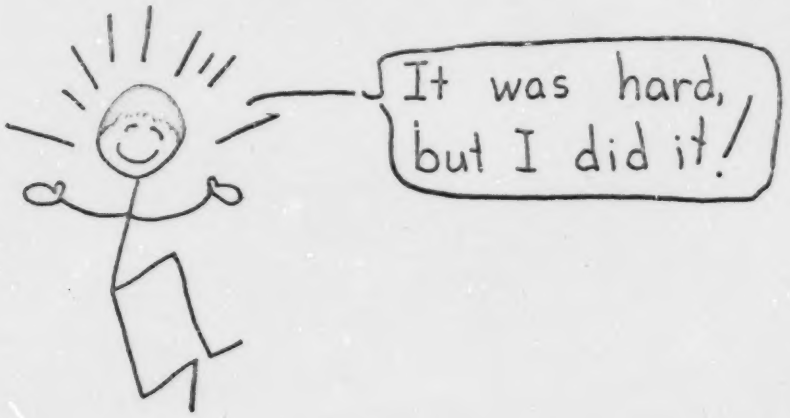
He must learn which side is the right side to put the paste on.

He must learn that the picture must be placed somewhere on the construction paper.

It is impossible to learn all of these things at once, expecially for the retarded child. The process of breaking down a task and teaching it step-by-step is the only successful way to teach a child with a learning problem.

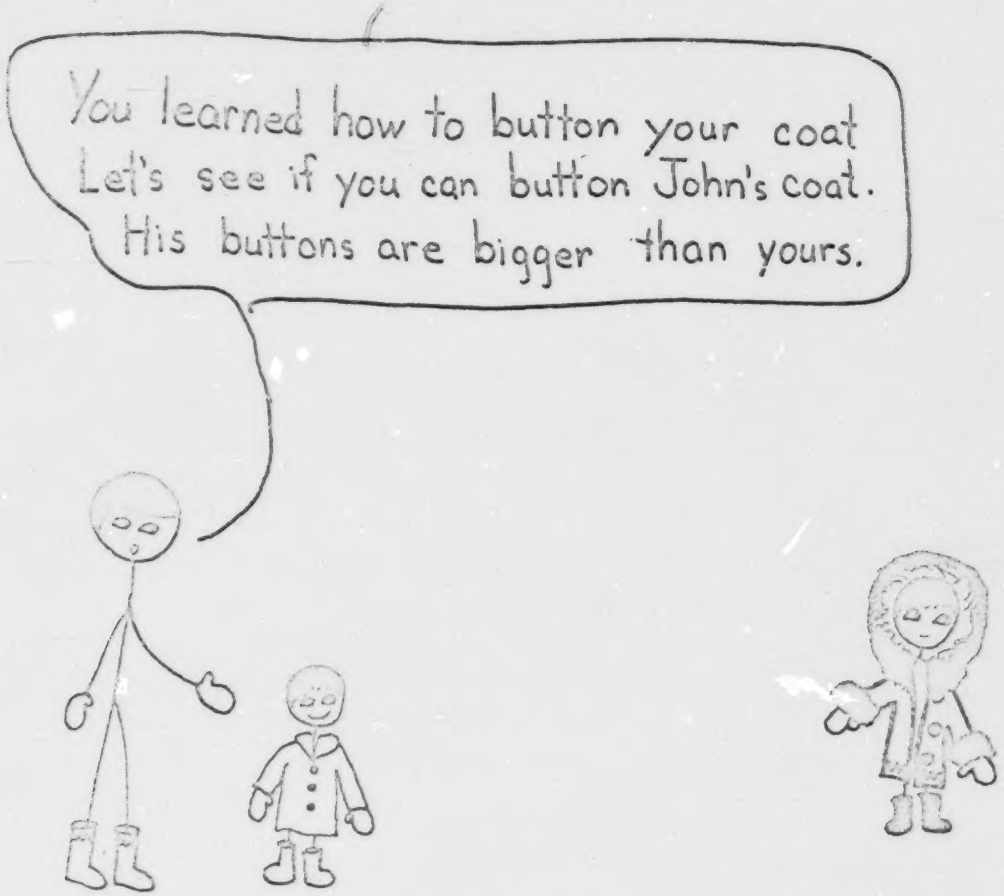
3. Finding the next step. In learning any skill, not all children will have to start at the very beginning. It is a challenge to parents and teachers to know at what level a child is for any given task, and to discover what the next steps should be. This is not easy. It requires intimate knowledge of the child's abilities and limitations.

4. Making the proper match. If a task is too simple for a child, he may become bored and uninterested. He will not learn much. Some tasks will be too difficult. In this case, the child will usually become frustrated and give up. He will not learn much in this situation, either. The proper match is a learning situation in which the task is challenging enough to maintain interest, but can be successfully accomplished by the child.



5. Repetition. It takes a longer period of time for the retarded youngster to understand concepts and tasks than for the normal child. He learns better from a short period of training that is repeated over and over again. He does not learn well in activities that require great concentration or long periods of time. Repetition does not have to be boring; it can be varied enough to provide interest.

Once a task is learned the child should try the same task in a different setting, with different materials, etc. It is often difficult for the retarded child to apply what he has learned to another situation. It is important that he learns how to use what he knows, even though some parts of the task appear different to him.



6. Multi-sensory approach. Try to use many of the child's senses when attempting to teach a concept or task. What he sees, hears, smells, tastes, and touches all will help him learn.

With a task like buttoning a coat, for example, you can help the child use several senses with instructions like these:

"Put the button through the hole." This gives the child an auditory clue as to what the task is.

"Feel the button. It's smooth isn't it? And the coat is rough." Now the child has a tactual clue as to the different parts of the task.

"Watch what you are doing." This is a visual clue as to what the task looks like.

Guide his fingers through the motions of the task, giving a clue through the muscles as to what the fingers are supposed to be doing. The more senses involved in any task, the more likely are chances for eventual success.

7. Avoid sudden changes in activities. Retarded children often need extra time in learning to adjust from one activity to another. Moving from play time to nap time, for example, may take longer for him than for the other members of the class. Adjustments are necessary and beneficial, but the retarded child needs gradual adjustments. Letting him know in advance that a change is coming is one way to help him in any adjustment.

8. Confidence. All children learn better when they feel that they are successful. Such feelings are most important for the retarded child. He is easily discouraged and often needs encouragement from adults. Providing experiences that give opportunities for succeeding does much to keep up his confidence level.

Postscript

The Educational Resources Information Center/Early Childhood Education Clearinghouse (ERIC/ECE) is one of a system of 16 clearinghouses sponsored by the National Institute of Education to provide information about current research and developments in the field of education. The clearinghouses, each focusing on a specific area of education (such as early childhood, teacher education, language and linguistics), are located at universities and institutions throughout the United States.

The clearinghouses search systematically to acquire current, significant documents relevant to education. These research studies, speeches, conference proceedings, curriculum guides, and other publications are abstracted, indexed and published in Research in Education (RIE), a monthly journal. RIE is available at libraries, or may be ordered from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

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The Early Childhood Education Clearinghouse (ERIC/ECE) distributes a quarterly newsletter ($2.00 - 4 issues) which reports on new programs and publications, and RIE documents of special interest. For a complete list of ERIC/ECE Publications, or if you would like to subscribe to the Newsletter write: Publications Office/IREC, College of Education, University of Illinois, 805 West Pennsylvania Avenue, Urbana, Illinois 61801. All orders must be accompanied by check or money order, payable to the University of Illinois. Sorry, we cannot bill.

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